

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 008998-0015	<div style="display: flex; justify-content: space-between;"> FOR FURTHER ACTION See Form PCT/IPEA/416 </div>	
International application No. PCT/CA2005/000006	International filing date (<i>day/month/year</i>) 06 January 2005 (06-01-2005)	Priority date (<i>day/month/year</i>) 07 January 2004 (07-01-2004)
International Patent Classification (IPC) or national classification and IPC IPC: H04L 29/02 (2006.01) , H04L 12/40 (2006.01) , H04L 12/18 (2006.01) , H04L 5/22 (2006.01)		
Applicant ALSTOM CANADA INC. ET AL		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p style="margin-left: 20px;">a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of <u>8</u> sheets, as follows:</p> <p style="margin-left: 40px;"><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>		
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>		
Date of submission of the demand 07 November 2005 (07-11-2005)	Date of completion of this report 31 May 2006 (31-05-2006)	
Name and mailing address of the IPEA/CA Canadian Intellectual Property Office Place du Portage I, C114 - 1st Floor, Box PCT 50 Victoria Street Gatineau, Quebec K1A 0C9 Facsimile No.: 001(819)953-2476	Authorized officer Stuart Ginn (819) 934-5147	

Box No. I Basis of the report

1. With regard to the language, this report is based on:
- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rules 12.3(a) and 23.1(b))
- ☐ publication of the international application (Rule 12.4(a))
- ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- ☒ pages 1- 2, 4 to 16 as originally filed/furnished
- ☒ pages* received by this Authority on _____
- ☐ pages* 3 received by this Authority on November 7, 2005
- ☒ the claims:
- ☐ pages as originally filed/furnished
- ☐ pages* as amended (together with any statement) under Article 19
- ☒ pages* 17-23 received by this Authority on November 7, 2005
- ☐ pages* received by this Authority on _____
- ☒ the drawings:
- ☒ pages 1/5 to 5/5 as originally filed/furnished
- ☐ pages* received by this Authority on _____
- ☐ pages* received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	<u>1-39</u>	YES
	Claims	<u>NONE</u>	NO
Inventive step (IS)	Claims	<u>1-39</u>	YES
	Claims	<u>NONE</u>	NO
Industrial applicability (IA)	Claims	<u>1-39</u>	YES
	Claims	<u>NONE</u>	NO

2. Citations and explanations (Rule 70.7)

Reference is made to the following documents:

D1: "SLK2701 OC-48/24/12/3 SONET/SDH Multirate Transceiver", December 2001, Texas Instruments.

D2: EP 1 107599 A2 (Terayon Communication Systems), 13 June 2001 (2001.06.13).

D3: WO 03084121 A1 (Short), 9 October 2003 (2003.10.09).

D4: EP 1215848 A1 (Suzuki) 11 December 2001 (2001.12.11).

Claims 1-39 meet the requirements of Novelty, Inventive Step and Industrial Applicability under PCT Articles 33(2), 33(3) and 33(4) because the prior art does not disclose a system for broadcasting multi-channel signals to a receiving station over a two-wire bus comprising an encoder as described in claims 1 and 26 of the application.

In particular, the prior art does not disclose a receiver with de-emphasis including a decoder connectable to the receiving station, the decoder having a de-framer for reproducing the digital data corresponding to selected ones of the multi-channel signals from the frames, said de-framer being adapted to use a previous frame when an error condition is detected in a current frame.

D1 is considered the closest prior art. D1 describes a transceiver including a multiplexer/demultiplexer for digital data; support for framing ("FRAME_EN", p. 5); pre-emphasis (through pins "PRE1" and "PRE2", p. 5); de-emphasis; a decoder (block diagram, p. 2) with a de-framer and a synchronization circuit. The decoder performs parity checking, has a variable gain amplifier with a user interface ("programmable de-emphasis for the serial output", p. 1). The de-framer includes synchronization analysis ("Frame Sync", block diagram, p. 2) and serial-to-parallel conversion (block diagram, p. 2). Finally, the transceiver comprises a data repeater and is designed for high-speed applications ("Gigabit Ethernet", p. 1). D1 does not disclose a receiver including "a de-framer being adapted to use a previous frame when an error condition is detected in a current frame" as claimed in claim 1 of the application.

D2, D3 and D4 disclose various aspects related to the application but do not disclose fully any claim of the application nor could they be combined with the disclosure of D1 in a manner that would result in the application not containing an inventive step.

D2 discloses a method for digital data transmission that can transmit and receive time division multiplexed digital data (abstract).

D3 discloses a compression method for compressing digital data in which "data is compressed by using the look-up table" (p. 12, lines 21-22).

D4 discloses a communication device for audio signals where an encoder circuit compresses a signal using a "logarithmic quantization scheme" and where a decoder decompresses a signal "in accordance with the reverse characteristic of the encoder circuit" (paragraph [0020]).

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The description does not comply with PCT Article 5. The amendments to page 3 resulted in the deletion of three lines. This deletion leads to a lack of clarity in the description.

Claims 12 and 37 do not comply with PCT Article 6. Claim 12 is a dependent claim that depends on itself. This lack of clarity is likely due to mis-proper claim renumbering during amendments. Due to a change in dependency of claim 37, the phrases "the repeating" (claim 37, page 22 line 22) and "the other segment" (claim 37, page 22, lines 25-26) do not have proper antecedents.

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AP20 Rec'd CPTO 06 JUL 2006

a multiplexer for multiplexing digital data corresponding to the channel signals and producing a data stream;

a framer connected to the multiplexer, for breaking the data stream up into frames, and for inserting into said frame a header containing at least a predetermined pattern;

a transceiver with pre-emphasis connected to the framer of the encoder and connectable to the two-wire bus;

a receiver with de-emphasis, connectable to the two-wire bus, said receiver including:

10 a decoder connectable to the receiving station, the decoder having a de-framer for reproducing the digital data corresponding to selected ones of the multi-channel signals from the frames, said de-framer being adapted to use a previous frame when an error condition is detected in a current frame;

 a synchronization circuit using a pattern-oriented phase-locked loop for sampling the incoming data stream using said predetermined pattern, and for regenerating a system clock; and

20 a channel selector circuit connected to the de-framer and controlling which ones of the multi-channel signals are reproduced by the de-framer.

According to another aspect of the invention, there is provided a method of broadcasting high-speed applications over a serial multi-drop communication network, comprising:

 time-division multiplexing the high-speed applications to produce a data stream;

 framing the data stream into frames having a header and a parity bit, the header having a size lower than 32 bits;

30 transmitting the frames with pre-emphasis over the serial multi-drop communication network;

 receiving the frames with de-emphasis from the serial multi-drop communication network;